Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously presented) A method for accommodating different drum loads in an imaging system, the method comprising steps:

a) selecting a drum load from a plurality of drum loads;

b) applying a drive stimulus to the selected drum load;

c) monitoring a response of the selected drum load to the stimulus;

d) determining from the response a new value for at least one control parameter for driving the selected drum load, the at least one control parameter varying for each of the plurality of drum loads; and

e) updating the at least one control parameter in accordance with the new value.

2. (Previously presented) A method for accommodating different drum loads in an imaging system, the method comprising:

applying a drive stimulus to a drum load;

monitoring a response of the drum load to the drive stimulus;

determining a new value for at least one control parameter for driving the drum load; and

updating the control parameter in accordance with the new value;

wherein the drive stimulus is a pre-determined drive stimulus.

3. (Original) A method according to claim 2, wherein the pre-determined drive stimulus is a constant torque.

4. (Original) A method according to claim 2, wherein the pre-determined drive stimulus is a varying torque.

5. (Previously presented) A method according to claim 1, wherein steps (c) to (e) are performed under closed loop feedback control.

6. (Previously presented) A method according to claim 1, wherein steps (a) to (e) are performed under open loop feedback control.

7. (Previously presented) A method according to claim 6, wherein steps (c) to (e) are iteratively repeated.

8. (Previously presented) A method according to claim 7, comprising, after iteratively repeating steps (c) to (e) a plurality of times, discontinuing the iterative repetition of steps (c) to (e).

9. (Previously presented) A method for accommodating different drum loads in an imaging system, the method comprising:

applying a drive stimulus to a drum load;

monitoring a response of the drum load to the drive stimulus;

determining a new value for at least one control parameter for driving the drum load; and

updating the control parameter in accordance with the new value;

wherein the monitoring the response of the drum load to the stimulus is performed by optical means.

10. (Previously presented) A method for accommodating different drum loads in an imaging system, the method comprising:

applying a drive stimulus to a drum load;

monitoring a response of the drum load to the drive stimulus;

determining a new value for at least one control parameter for driving the drum load; and

updating the control parameter in accordance with the new value;

wherein the parameter is effective drum inertia.

11. (Previously presented) A method according to claim 10, wherein the effective drum inertia is calculate according to the formula:

$J=T/\alpha$ where T is the value of a constant torque stimulus applied to the drum and α is the rotational acceleration calculated from the monitored response of the drum load to the drive stimulus.

12. (Previously presented) A system for driving a drum load in an imaging system, comprising:

a drum drive for driving a drum load selected from a plurality of associated drum loads;

a drive stimulus to apply a stimulus to the selected drum load;

a monitor for monitoring a response of the selected drum load to the stimulus;

an encoder for sensing the resulting rotation of the selected drum load to the stimulus; and

a controller operably connected to the drum drive to provide control signals thereto, the control signals derived by the controller in response to rotational information received from the encoder, the controller having a drive parameter estimator for determining one or more new drive parameter values for driving the selected drum, the one or more drive parameters varying for each of the plurality of drum loads including a parameter defined by relationship which relates the control signals to a state of rotation of the selected drum load.

13. (Original) A system for driving a drum load according to claim 12, wherein the drive parameter estimator comprises instructions stored in computer readable memory.

14. (Original) A system for driving a drum load according to claim 12, wherein the drive parameter estimator comprises an adaptive controller.

15. (Previously Presented) A system for driving a drum load the system comprising:

a drum drive for driving a drum, the drum having an associated drum load;

an encoder for sensing resulting rotation of the drum; and

a controller oeprably connected to the drum drive to provide control signals thereto, the control signals derived by the controller in response to rotational information received from the encoder, the controller having a drive parameter estimator for determining suitable drive conditions for the drum load;

wherein the controller is adapted to switch between an open loop and a closed loop control mode, and the drive parameter estimator determines suitable drive conditions for the drum load in the open loop mode.

16. (Previously Presented) A system for driving a drum load the system comprising:

a drum drive for driving a drum, the drum having an associated drum load;

an encoder for sensing resulting rotation of the drum; and

a controller operably connected to the drum drive to provide control signals thereto, the control signals derived by the controller in response to rotational information received from the encoder, the controller having a drive parameter estimator for determining suitable drive conditions for the drum load;

wherein the controller is adapted to switch between an open loop and a closed loop control mode, and the drive parameter estimator determines suitable drive conditions for the drum load in the closed loop mode.

17. (Previously Presented) A system according to claim 12 wherein the controller is adapted to switch between an open loop control mode and a closed loop control mode.

18. (Previously Presented) A system according to claim 12 comprising a memory accessible to the controller wherein the drive parameters determined by the drive parameter estimator are stored in the memory.

19. (Previously Presented) A system according to claim 12 wherein the relationship comprises a model for estimating the state of rotation of the drum in response to given control signals.

20. (Cancelled)

21. (Currently Amended) A system according to claim 12 [[20]] wherein the one or more drive parameters comprise an effective drum inertia.

22. (Previously Presented) A method according to claim 1 comprising determining values for a plurality of control parameters.

23. (Previously Presented) A method according to claim 1 wherein the at least one control parameter comprises one or more of: an effective inertia, a damping coefficient, and a torque constant.

24. (Previously Presented) A method according to claim 1 comprising storing state variables representing the response of the drum load to the stimulus and performing step c) after removing the stimulus.

25. (Cancelled)

26. (Cancelled)

27. (Previously Presented) A method according to claim 1 wherein the at least one control parameter comprises at least one parameter of a model for estimating the state of rotation of the drum load in response to a given torque.

28. (Previously presented) A method according to claim 1 wherein the at least one control parameter comprises an effective drum inertia.

29. (Previously presented) A method for accommodating different drum loads in an imaging system, the method comprising:

(a) applying a drive stimulus to a drum load;

(b) monitoring a response of the drum load to the drive stimulus;

(c) determining from the response a new value for at least one control parameter, the at least one control parameter including a relationship which relates an output of a drum controller for driving the drum load to a state of rotation of the drumload;

(d) updating the at least one control parameter in accordance with the new value;

(e) performing steps a) to d) under an open loop feedback control wherein steps b) to d) are iteratively repeated; and

(f) after iteratively repeating steps b) to d) a plurality of times discontinuing the iterative repetition of steps b) to d).

30. (Previously presented) A system for driving a drum load comprising:

a drum drive for driving a drum, the drum having an associated drum load;

an encoder for sensing resulting rotation of the drum; and

a controller operably connected to the drum drive to provide control signals thereto, the control signals derived by the controller in response to rotational information received from the encoder, the controller having a drive parameter estimator for determining one or more drive parameters suitable for the drum load, the one or more drive parameters including a relationship which relates to the control signals to a state or rotation of the drum wherein the relationship comprises a model for estimating the state of rotation of the drum in response to given control signals.

31. (Previously presented) A system for driving a drum load comprising:

a drum drive for driving a drum, the drum having an associated drum load;

an encoder for sensing resulting rotation of the drum;

a controller operably connected to the drum drive to provide control signals thereto, the control signals derived by the controller in response to rotational information received from the encoder, the controller having a drive parameter estimator for determining one or more drive parameters suitable for the

drum load, the one or more drive parameters including a relationship which relates to the control signals to a state of rotation of the drum wherein the one or more drive parameters includes a model for estimating the state of rotation of the drum in response to a given torque applied to the drive drum.

32. (Previously presented) A system for driving a drum load comprising:

a drum drive for driving a drum, the drum having an associated drum load;

an encoder for sensing resulting rotation of the drum; and

a controller operably connected to the drum drive to provide control signals thereto, the control signals derived by the controller in response to rotational information received from the encoder, the controller having a drive parameter estimator for determining one or more drive parameters suitable for the drum load, the one or more drive parameters including a relationship which relates the control signals to a state of rotation of the drum wherein the one or more drive parameters comprise an effective drive inertia.

33. (Previously presented) A method for accommodating different drum loads in an imaging system, the method comprising:

(a) applying a drive stimulus to a drum load;

(b) monitoring a response of the drum load to the drive stimulus;

(c) determining from the response a new value for at least one control parameter, the at least one control parameter including a relationship which relates an output of a drum controller for driving the drum load to a state of rotation of the drum load; and

(d) updating the at least one control parameter in accordance with the new value wherein at least one control parameter comprises one or more of an effective inertia, a damping coefficient; and

a torque constant.

34. (Previously presented) A method for accommodating different drum loads in an imaging device imaging system, the method comprising:

(a) applying a drive stimulus to a drum load;

(b) monitoring a response of the drum load to the drive stimulus;

(c) determining from the response a new value for at least one control parameter, the at least one control parameter including a relationship which relates an output of a drum controller for driving the drum load to a state of rotation of the drum load;

(d) updating the at least one control parameter in accordance with the new value;

the updating step comprising storing state variables representing the response of the drum load to the stimulus and performing step c) after removing the stimulus.

35. (Previously presented) A method for accommodating different drum loads in an imaging system, the method comprising:

(a) applying a drive stimulus to a drum load;

(b) monitoring a response of the drum load to the drive stimulus;

(c) determining from the response a new value for at least one control parameter the at least one control parameter the at least one control parameter, the at least one control parameter including a relationship which relates an output of a drum controller for driving the drum load to a state of rotation of the drum load;

(d) updating the at least one control parameter in accordance with the new value;

wherein at least one control parameter includes a model for estimating the state of rotation of the drum load in response to a given torque.

36. (Previously presented) A method for accommodating different drum loads in an imaging system, the method comprising:

(a) applying a drive stimulus to a drum load;

(b) monitoring a response of the drum load to the drive stimulus;

(c) determining from the response a new value for at least one control parameter, the at least one control parameter including a relationship which relates an output of a drum controller for driving the drum load to a state of rotation of the drum load;

(d) updating the at least one control parameter in accordance with the new value wherein the at least one control parameter comprises an effective drum inertia.

37. (Cancelled)